

## ***Lebbeus rubrodentatus* sp. nov. (Crustacea: Caridea: Hippolytidae) from the Australian North West Shelf**

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### ABSTRACT

A new species of the hippolytid genus *Lebbeus* White, 1847, *L. rubrodentatus* sp. nov., is described and illustrated. Its colour pattern in life is diagnostic. The single specimen was sorted from a benthic trawl sample obtained in 360–396 m in the Timor Sea. A key to the five carinate species of the large genus *Lebbeus* is provided.

KEYWORDS: *Lebbeus rubrodentatus*, new species, Decapoda, Hippolytidae, Timor Sea.

### INTRODUCTION

A recent paper by McCallum & Poore (2010) reported on the carinate species of *Lebbeus* White, 1847 (i.e., those species possessing a high, bilaterally compressed dorsal keel on the carapace) with particular reference to the Australian species. Two new species, *L. clarehannah* McCallum & Poore, 2010 and *L. cristagalli* McCallum & Poore, 2010, were described and illustrated in detail. In the remarks on *L. cristagalli* it was noted that one specimen was significantly different from the 10 type specimens, none of which had the carinal dentition resembling the present specimen. These authors noted that the specimen might belong to another new species. It was suggested that the reduced size of the two distal teeth might be due to damage in life. The colouration was also significantly different. Re-examination of the carinal teeth by the present author shows no suggestion of traumatic origin, with the teeth forming a graduated, though exaggerated, series when compared to the other species of this group. McCallum & Poore (2010) also clearly demonstrate that the striking colour patterns of the other species of this group are species-specific, as shown by their excellent colour illustrations. There is no reason to doubt that the distinctive colour pattern found in the present specimen is not also species-specific. Thus the specimen can safely be regarded as a distinct species and is now here provided with a name.

The unique holotype is held in the collections of the Museum and Art Gallery of the Northern Territory, Darwin. Abbreviations used: CL, postorbital carapace length; NTM, Museum and Art Gallery of the Northern Territory Museum (formerly Northern Territory Museum), Darwin; QM, Queensland Museum, Brisbane.

### SYSTEMATICS

#### Family Hippolytidae Bate, 1888

##### Genus *Lebbeus* White, 1847

Gender masculine. Type species, by monotypy, *Lebbeus orthorhynchus* (Leach mss) White, 1847 (= *Alpheus polaris* Sabine, 1824). Recent, Circum-Arctic. The genus name *Lebbeus* White, 1847 has been conserved under the Plenary Powers of the International Commission on Zoological Nomenclature and placed on the Official List of Generic Names in Zoology (ICZN 1963: Opinion 671).

Synonyms of *Lebbeus* are *Hetairns* Bate, 1888 and *Birulaecaris* Dons, 1915 (Holthuis 1993).

##### *Lebbeus rubrodentatus* sp. nov.

Figs 1, 2

*Lebbeus cristagalli* McCallum & Poore, 2010: 134 (in part), fig. 4E.

**Material examined.** HOLOTYPE – NTM CR.6897, ovig. ♀, CL 15.2 mm, Timor Sea, 9°35'S, 129°28'E, 360–396 m, trawl, coll. B. Wallner on F.V. *Territory Pearl*, 18 January 1988.

##### Description.

Carapace with very well developed triangular dorsal carina bearing 5 acute teeth, posterior first tooth small, narrowly acute, second and third teeth similar, much enlarged, broadly acute, second slightly larger than third, fourth and fifth anterior teeth very small, acute; terminal segment of third maxilliped with about 25 spines; epipods present on first three pereopods, 4 pairs of dorsal telson spines; other morphological characters as in *L. cristagalli*.

**Colouration** (Fig. 1). Body and appendages generally pale pink, most intense over postorbital region and dorsal carapace, paler over branchiostegal region; dorsal carapace



Fig. 1. *Lebbeus rubrodentatus* sp. nov., ovigerous female holotype, Timor Sea, 360–396 m, NTM CR.6897, *pinxit* D. Percival.



Fig. 2. *Lebbeus rubrodentatus* sp. nov., ovigerous female holotype, Timor Sea, 360–396 m, NTM CR.6897, carapace and rostrum.

and lower half of carina with numerous red spots, largest in postorbital area and decreasing in size peripherally, largest spots with pale centre; carinal teeth all distally deep red, with similar red patches on distal scaphocerite and carapocerite; antennal flagella whitish. Ova dark grey.

**Etymology.** From *rubrum* (Latin), red, and *dentatus* (Latin), toothed, a reference to the distal red of the dorsal carapace teeth.

**Remarks.** Five carinate species of *Lebbeus* are now known, all from moderately deep water, with *L. yaldwini* occurring from 190 m to 470 m, with the other species at intermediate depth. *Lebbeus compressus* occurs in Japanese waters, all other species are known only from Australian waters. McCallum & Poore (2010) noted that these species form a discrete species group on the basis of the elevated carina on the carapace and presence of epipods on the first and second pereopods only. The new species also has an epipod on the third pereopod. The carina is a very characteristic feature that suggests that these species should be generically separate from the other *Lebbeus* species. The carapace of *L. rubrodentatus* (Fig. 2) has a small supraorbital spine above an obsolescent orbit, with the inferior orbital

angle strongly produced, the antennal spine is slender and acute, reaching to the level of the tip of the inferior orbital angle, and the lower anterior margin of the carapace is convex above a small pterygostomial tooth. The terminal segment of the third maxillipeds bears about 25 cornified spines extending over almost the whole segment length. The third ambulatory dactyl has a slightly larger distoventral spine and four slender ventral spines, the fifth is similar with three ventral spines.

#### Revised key to the carinate species of *Lebbeus*

1. Dorsal carina of carapace low, convex, with 9–11 slender teeth ..... 2
- Dorsal carina of carapace elevated, triangular, with 4–8 broadly acute teeth ..... 3
2. Carinal teeth broader, 10 teeth (carapace pale yellow and green, with rows of scarlet spots; abdominal somites 1–3 with rows of scarlet spots) ..... *L. clarehanutah* MacCallum & Poore
- Carinal teeth slender, 9–11 teeth (carapace pale yellow and green, with rows of scarlet spots; abdominal somites 1–3 with rows of scarlet spots) ..... *L. yaldwyni* Kensley, Tranter & Griffin
3. Second and third carinal teeth very large, fourth and fifth very small (dorsolateral carapace and lower half of carapace crest with pink spots, some ocellate, abdominal somites 1–3 without markings) ..... *L. rubrodentatus* sp. nov.
- Carinal teeth (except first) large, forming a regularly diminishing series distally ..... 4
4. Terminal segment of third maxilliped with 8–10 corneous spines; with 4–7 carinal teeth, rostrum very acute (dorsal carapace with dense small red spots, dorsal carina white, feebly red spotted, branchiostegite and abdomen and proximal segments of appendages scarlet) ..... *L. coupressus* (Yokoya)
- Terminal segment of third maxilliped with more than 19 corneous spines; with 6–8 carinal teeth, rostrum distally sub-truncate (carapace colour pattern of 6–10 oblique scarlet stripes, or with stripes broken into many small scarlet spots) ..... *L. cristagalli* MacCallum & Poore

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